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EXAMINER	
LE, DUY K	

ART UNIT	PAPER NUMBER
2685	7

DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/769,122	WALCZAK ET AL.	
	Examiner	Art Unit	
	Duy K Le	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to amendment filed on February 10, 2004.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3 and 12-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Bajikar (U.S. Patent Application Publication 2002/0198001 A1).

As to claim 1, the Bajikar reference discloses a method for validating a non-network based location fix of a mobile station in a communications network ("FIG. 4 illustrates an alternative embodiment of a positioning system. This positioning system 400 incorporates a global positioning system (GPS) with an independent positioning system" (page 2, col. 2, paragraph [0024], lines 1-4)), comprising:

generating a non-network based location fix of the mobile station ("similarly, the transceiver can use three noise codes transmitted by three GPS satellites to determine its 3-dimensional position with respect to the three GPS satellites" (page 3, col. 1, paragraph [0027], lines 13-16);

generating a network based location fix of the mobile station ("the transceiver can use three first codes transmitted by three transmitters to determine its 3-dimensional position with respect to the three transmitters" (page 3, col. 1, paragraph [0027], lines 11-13));

evaluating the validity of the non-network based location fix of the mobile station by comparing the non-network based location fix with the network based location fix ("augmentation data may also be exchanged between the GPS system and a short-range wireless communications interface on a transceiver . This information can include, but is not limited to differential correction, wide area augmentation system (WASS) corrections, satellite ephemeris data, doppler shift estimates, satellite snapshot data, and terrain maps" (page 3, col. 1, paragraph [0028], line 1-7)).

As to claim 2 (Currently Amended), the Bajikar reference discloses the method of Claim 1, generating the non-network based location fix includes receiving global positioning system signals at the mobile station ("similarly, the transceiver can use three noise codes transmitted by three GPS satellites to determine its 3-dimensional position with respect to the three GPS satellites" (page 3, col. 1, paragraph [0027], lines 13-16)).

As to claims 3 and 13, the Bajikar reference discloses the communications network having a plurality of base stations, generating the network based location fix by measuring a time related parameter of signals received at the mobile station from several base stations neighboring the mobile station ("in one embodiment, the correlator compares the two codes by calculating a time shift between the first code and second code" (page 2, col. 1, paragraph [0021], lines 1-3). "The time shift is used to determine the distance between the transceiver and the transmitter. The transceiver can use three first codes transmitted by three transmitters to determine its 3-

dimensional position with respect to the three transmitters" (page 2, col. 1, paragraph [0021], lines 7-11)).

As to claim 12, as cited in claim 1, the Bajikar reference discloses a method for validating a satellite positioning system based location fix of a satellite positioning system enabled cellular mobile station in a cellular communications network ("FIG. 4 illustrates an alternative embodiment of a positioning system. This positioning system 400 incorporates a global positioning system (GPS) with an independent positioning system" (page 2, col. 2, paragraph [0024], lines 1-4)), comprising:

generating a satellite positioning system based location fix of the mobile station ("similarly, the transceiver can use three noise codes transmitted by three GPS satellites to determine its 3-dimensional position with respect to the three GPS satellites" (page 3, col. 1, paragraph [0027], lines 13-16);

generating a network based location fix of the mobile station ("the transceiver can use three first codes transmitted by three transmitters to determine its 3-dimensional position with respect to the three transmitters" (page 3, col. 1, paragraph [0027], lines 11-13));

evaluating the validity of the satellite positioning system based location fix by comparing the satellite positioning system based location fix to the network based location fix ("augmentation data may also be exchanged between the GPS system and a short-range wireless communications interface on a transceiver . This information can include, but is not limited to differential correction, wide area augmentation system (WASS) corrections, satellite ephemeris data, doppler shift estimates, satellite snapshot data, and terrain maps" (page 3, col. 1, paragraph [0028], line 1-7)).

4. Claims 21-22 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Yen (U.S. Patent 6,539,230).

As to claim 21, The Yen reference discloses a method for validating a location fix of a mobile station, comprising:

generating a plurality of location fixes of the mobile station (See Col. 6, line 48 to Col. 7, line 55: multiple location fixes (x_1,y_1), (x_2,y_2), (x_3,y_3), (x_4,y_4) were described);

evaluating the validity of a recently generated location fix of the mobile station by comparing the location fix for which the validity determination is required to a previously generated mobile station location fix ("In step 208, the wireless terminal will determine that the second entry of the location/parameter table, having location (x_1,y_1), is the closest to the current location of (x_4,y_4). Assuming that the test in step 210 indicates that the distance between (x_1,y_1) and (x_4,y_4) is less than L, control will pass to step 216, at which point the entry containing (x_1,y_1) and DCCH1 is placed in the first location of the location/parameter table and the other entries are shifted down" (Col. 7, lines 39-46). See Col. 6, line 48 to Col. 7, line 55).

As to claim 22, the Yen reference discloses the method of Claim 21, evaluating the validity of the location fix for which the validity determination is required by determining whether it is within a specified range of the previously generated location fix ("In step 208, the wireless terminal will determine that the second entry of the location/parameter table, having location (x_1,y_1), is the closest to the current location of (x_4,y_4). Assuming that the test in step 210 indicates that the distance between (x_1,y_1) and (x_4,y_4) is less than L, control will pass to step 216, at which point the entry containing (x_1,y_1) and DCCH1 is placed in the first location of the location/parameter table and the other entries are shifted down" (Col. 7, lines 39-46)).

As to claim 24, as cited in claim 21, the Yen reference discloses the method of Claim 21, evaluating the validity of the location fix for which the validity determination is required by determining whether it is closer to a more recently generated location fix than it is to a less recently generated location fix.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 4-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2002/0198001 A1 to Bajikar in view of Hill et al. (U.S. Patent 5,857,155).

As to claim 4, the Bajikar reference discloses the method of Claim 1. However, it does not disclose translating the network based location fix and the non-network based location fix into a common format prior to comparing the network and non-network based location fixes. The Hill reference teaches "a method of controlling the operation of a subscriber device having a GPS receiver within a messaging system having a plurality of transmitters having known coordinates comprises the steps of acquiring GPS information from the GPS receiver and accessing a memory location having known transmitter coordinates and comparing the known transmitter coordinates with the GPS information" (Col. 1, lines 58-65).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Bajikar to translate the network based location fix and the non-network based location fix into a common format prior to comparing the network and non-network based location fixes, as taught by Hill, in order to control the operation of a subscriber device with adjustment to the power from the transmitter module.

As to claim 5, the Bajikar reference discloses the method of Claim 1. However, it does not disclose generating the non-network based location fix of the mobile station in longitude and latitude coordinates, converting the network based location fix to longitude and latitude coordinates before comparing the network based location fix with the non-network based location fix. The Hill reference teaches "Figure 5, the method 200 comprises at step 202 of acquiring GPS information at a selective call receiver from the GPS receiver comprising information selected from the group of latitude, longitude, and velocity" (Col. 5, lines 41-45). "At step 200 a look-up table of the known transmitter coordinates is accessed and compared with the known transmitter coordinates with the GPS information" (Col. 5, lines 49-52).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Bajikar to generate the non-network based location fix of the mobile station in longitude and latitude coordinates, converting the network based location fix to longitude and latitude coordinates before comparing the network based location fix with the non-network based location fix, as taught by Hill, in order to control the operation of a two-way selective call subscriber device.

As to claim 6, the Bajikar reference discloses the method of Claim 1. However, it does not disclose evaluating the validity of the non-network based location fix by determining

whether the non-network based location fix is within a specified range of the network based location fix. The Hill reference teaches "the known GPS position of the subscriber could be used to determine the range to the nearest local base receiver. The location of the nearest base receivers would be stored in a code plug table preferably in the form of a base receiver location map 54. The minimum distance to a receiving base station would easily be calculated from the GPS information" (Col. 3, lines 46-52).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Bajikar to evaluate the validity of the non-network based location fix by determining whether the non-network based location fix is within a specified range of the network based location fix, as taught by Hill, in order to adjust the transmit output level in a subscriber device.

As to claim 8, as cited in claim 1, the Bajikar reference discloses the method of Claim 1, the communications network having a plurality of base stations, generating the network based location fix by measuring at the mobile station several base station signals neighboring the mobile station. However, it does not disclose evaluating the validity of the non-network based location fist by determining whether the non-network based location fix is within a specified range of the network based mobile station location fix. As cited in claim 6, the Hill reference teaches evaluating the validity of the non-network based location fist by determining whether the non-network based location fix is within a specified range of the network based mobile station location fix.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Bajikar to evaluate the validity of the non-

network based location fix by determining whether the non-network based location fix is within a specified range of the network based location fix, as taught by Hill, in order to adjust the transmit output level in a subscriber device.

7. Claims 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2002/0198001 A1 to Bajikar in view of Hill et al. (U.S. Patent 5,857,155) and further in view of Yen (U.S. Patent 6,539,230).

As to claims 7 and 14, Bajikar-Hill discloses the method of Claim 6 and Claim 12. However, it does not disclose defining the specified range based on an estimated velocity of the mobile station and a time interval between the generation of the network based location fix and the non-network (or satellite positioning system) based location fix. The Yen reference teaches "T should be set to a time period which represents the amount of time it is likely to take for a location dependent operating parameter to become stale" (Col. 5, lines 19-21). As shown in Figure 2 in Yen, after timer T has timed out, "in step 206 the current location of the wireless terminal is obtained from the GPS receiver 114. The current latitude is assigned to $x_{current}$ and the current longitude is assigned to $y_{current}$" (Col. 5, lines 23-26). "In step 210 the wireless terminal determines whether the distance between ($x_{current}$, $y_{current}$) and (x_i, y_i) is greater than a value L" (Col. 5, lines 35-37). "The value L is the distance which, if traveled by the wireless terminal, would generally result in the wireless terminal entering a new cell" (Col. 6, lines 43-45). As interpreted by examiner, a timer interval is T and it is inherent that an estimated velocity can be used for or derived from the distance value L.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Bajikar-Hill to define the specified range

based on an estimated velocity of the mobile station and a time interval between the generation of the network based location fix and the non-network (or satellite positioning system) based location fix, as taught by Yen, in order to update the current location-dependent operating parameters to improve roaming capability of a wireless telephone.

8. Claims 9, 15, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2002/0198001 A1 to Bajikar in view of Bala et al. (U.S. Patent Application Publication 2002/0068580 A1).

As to claims 9, 15, and 19, the Bajikar reference discloses the method of Claims 1 and 12, evaluating the validity of the non-networked (or satellite positioning system) based location fix by comparing it to one network based location fix. However, it does not disclose generating a plurality of network based location fixes of the mobile station and evaluating the validity of the non-networked (or satellite positioning system) based location fix by comparing it to at least one of the plurality of network based location fixes. The Bala reference teaches generating a plurality of network based location fixes of the mobile station ("movement information for a subscriber can include past locations for a subscriber, e.g., the identity of and number of times transmitters have successfully polled the subscriber, or future expected movement activity" (page 1, col. 1, paragraph [0006], lines 8-12)), storing the plurality of network based location fixes ("movement information for subscribers is stored and analyzed to determine the likely current location(s) for a subscriber" (Abstract)), and evaluating the validity of the non-networked (or satellite positioning system) based location fix by comparing it to at least one of the plurality of network based location fixes("the movement information for the subscriber is analyzed to determine the likely current location of the subscriber. Preferably, a hierarchical list of probable current locations is

determined where a first location (e.g., transmitter) in the list is the most likely current location for the subscriber, followed by a second location (e.g., transmitter) that is the second most likely current location, and so on. The probable location(s) of the subscriber need not be exact physical locations of the subscriber, but can be an expected area within which the subscriber is located" (page 2, col. 1, paragraph [0019], lines 2-13)). As interpreted by examiner, multiple locations of the subscriber are determined and evaluated.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Bajikar to generate a plurality of network based location fixes of the mobile station and evaluate the validity of the non-networked (or satellite positioning system) based location fix by comparing it to at least one of the plurality of network based location fixes, as taught by Bala, in order to determine current location of a mobile station.

9. Claims 10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2002/0198001 A1 to Bajikar in view of Bala et al. (U.S. Patent Application Publication 2002/0068580 A1) and further in view of Yen (U.S. Patent 6,539,230).

As to claims 10 and 17, Bajikar-Bala discloses the method of Claims 9 and 12. However, it does not disclose evaluating the validity of the non-network (or satellite positioning system) based location fix by determining whether the non-network (or satellite positioning system) based location fix is closer to a less recently generated network based location fix than it is to a more recently generated network based location fix. The Yen reference teaches evaluating the validity of the non-network (or satellite positioning system) based location fix by determining whether the non-network (or satellite positioning system) based location fix is closer to a less

recently generated network based location fix than it is to a more recently generated network based location fix ("the location information may be supplied, for example, by a global positioning satellite (GPS) receiver in the wireless terminal, or by other location measurement techniques (e.g., triangulation based on signal strengths, dead reckoning)" (Col. 2, lines 39-43). "In step 208, the wireless terminal will determine that the second entry of the location/parameter table, having location (x_1,y_1), is the closest to the current location of (x_4,y_4). Assuming that the test in step 210 indicates that the distance between (x_1,y_1) and (x_4,y_4) is less than L, control will pass to step 216, at which point the entry containing (x_1,y_1) and DCCH1 is placed in the first location of the location/parameter table and the other entries are shifted down" (Col. 7, lines 39-46). See Col. 6, line 48 to Col. 7, line 55).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Bajikar-Bala to evaluate the validity of the non-network based location fix by determining whether the non-network based location fix is closer to a less recently generated network based location fix than it is to a more recently generated network based location fix, as taught by Yen, in order to update and store current location and location-dependent operating parameter for a mobile station.

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2002/0198001 A1 to Bajikar in view of Bala et al. (U.S. Patent Application Publication 2002/0068580 A1) and further in view of Hill et al. (U.S. Patent 5,857,155).

As to claim 11, the Bajikar reference discloses the method of Claim 1. However, it does not disclose generating a plurality of network based location fixes of the mobile station,

estimating a future location fix of the mobile station based on the plurality of the network based location fixes, evaluating the validity of the non-networked based location fix by determining whether the non-network based location fix is within a specified range of the estimated location fix. As cited in claim 9, The Bala reference teaches generating a plurality of network based location fixes of the mobile station ("movement information for a subscriber can include past locations for a subscriber, e.g., the identity of and number of times transmitters have successfully polled the subscriber, or future expected movement activity" (page 1, col. 1, paragraph [0006], lines 8-12)) and estimating a future location of the mobile station based on the plurality of the network based location fixes ("the movement information for the subscriber is analyzed to determine the likely current location of the subscriber" (page 2, col. 1, paragraph [0019], lines 2-4)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Bajikar to generate a plurality of network based location fixes of the mobile station and estimate a future location fix of the mobile station based on the plurality of the network based location fixes, as taught by Bala, in order to determine the probable current location of the mobile station.

However, Bajikar-Bala does not disclose evaluating the validity of the non-networked based location fix by determining whether the non-network based location fix is within a specified range of the estimated location fix. As cited in claim 6, the Hill reference teaches evaluating the validity of the non-networked based location fix by determining whether the non-network based location fix is within a specified range of the estimated location fix ("the known GPS position of the subscriber could be used to determine the range to the nearest local base

receiver. The location of the nearest base receivers would be stored in a code plug table preferably in the form of a base receiver location map 54. The minimum distance to a receiving base station would easily be calculated from the GPS information" (Col. 3, lines 46-52)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Bajikar-Bala to evaluate the validity of the non-networked based location fix by determining whether the non-network based location fix is within a specified range of the estimated location fix, as taught by Hill, in order to determine an expected area within which a mobile station is located.

11. Claims 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2002/0198001 A1 to Bajikar in view of Elliot (U.S. Patent Application Publication 2002/0164993 A1).

As to claim 16, the Bajikar reference discloses the method of Claim 12. However, it does not disclose generating a plurality of network based location fixes of the mobile station, ordering the plurality of network based location fixes by applying a corresponding time of acquisition attribute thereto, evaluating the validity of the satellite positioning system based location fix by comparing the satellite positioning system based location fix with the plurality of time stamped network based location fixes. The Elliot reference teaches generating a plurality of network based location fixes of the mobile station, ordering the plurality of network based location fixes by applying a corresponding time of acquisition attribute thereto, evaluating the validity of the satellite positioning system based location fix by comparing the satellite positioning system based location fix with the plurality of time stamped network based location fixes ("most significant technologies for locating such mobile equipment are GPS, DGPS, AOA, TOA, and

TDOA. These provide sufficient data to determine geographical coordinates (sometimes altitude) that can be used to accurately determine the cartographic location of a communication device" (page 1, col. 2, paragraph [0016], lines 11-16). "Path calculation can be optionally provided within logic and database unit 24" (page 2, col. 2, paragraph [0026], lines 8-9). "According to the present invention, the location of the mobile device 26 may be sampled at a predetermined time interval to ensure that the user of the mobile device 26 is following the prescribed path plan" (page 1, col. 2, paragraph [0030], lines 4-7). "Once the location of the mobile device 26 has been determined, optionally the location of the device is stored in a database" (page 2, col. 2, paragraph [0029], lines 1-3). "The boundary may change over time. For example, during a commute of some sort, the mobile device 26 may be in an area for only a short period of time, or be permitted or required to be in a specified areas at specified times, e.g. must be at work every weekday between 9 a.m. and 5 p.m." (page 3, col. 1, paragraph [0038], lines 1-6)). As interpreted by examiner, a path contains a plurality of location fixes generated from one of the cited methods. There are time stamps associated with the path and the determined location fixes for comparing to assess whether the mobile station is following the prescribed path plan within specified times.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Bajikar to generate a plurality of network based location fixes of the mobile station, ordering the plurality of network based location fixes by applying a corresponding time of acquisition attribute thereto, evaluating the validity of the satellite positioning system based location fix by comparing the satellite positioning system based location fix with the plurality of time stamped network based location fixes, as taught by

Elliot, in order to determine a prescribed path plan a mobile station should follow within specified times.

As to claim 20, the Bajikar reference discloses the method of Claim 12. However, it does not expressly disclose generating a subsequent satellite positioning system based location fix of the mobile station if a prior satellite positioning system based location fix is invalid. The Elliot reference teaches generating a subsequent satellite positioning system based location fix of the mobile station if a prior satellite positioning system based location fix is invalid ("it is determined whether the location of the mobile device 26 matches a previously stored path plan. If the location of the mobile device 26 does not match the stored path plan, an alert signal is transmitted to the mobile device 26" (page 2, col. 2, paragraph [0029], lines 4-8). "Directions, or a new optimal path, to an ultimate destination may be recalculated based on the present location of the mobile device 26" (page 2, col. 2, paragraph [0029], lines 10-12). As interpreted by examiner, a previous stored path plan (previous location fix) is invalid, a new path plan (new location fix) is calculated and generated.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Bajikar to generate a subsequent satellite positioning system based location fix of the mobile station if a prior satellite positioning system based location fix is invalid, as taught by Elliot, in order to ensure a mobile station follows a prescribed path plan.

12. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2002/0198001 A1 to Bajikar in view of Bala et al. (U.S. Patent

Application Publication 2002/0068580 A1) in view of Yen (U.S. Patent 6,539,230) and further in view of Hill et al. (U.S. Patent 5,857,155).

As to claim 18, Bajikar-Bala-Yen discloses the method of Claim 17, estimating a future location of the mobile station by extrapolating along an estimated path of the mobile station ("a subscriber's likely current location could be determined, at least in part, based on the subscriber's last location, the speed and direction of travel of the subscriber and the time when the subscriber's last location was confirmed" (Bala, page 2, paragraph [0020], lines 19-23)). However, Bajikar-Bala-Yen does not disclose evaluating the validity of the satellite positioning system based location fix by determining whether the satellite positioning system based location fix is within a specified range of the estimated location fix.

The Hill reference teaches evaluating the validity of the satellite positioning system based location fix by determining whether the satellite positioning system based location fix is within a specified range of the estimated location fix ("the known GPS position of the subscriber could be used to determine the range to the nearest local base receiver. The location of the nearest base receivers would be stored in a code plug table preferably in the form of a base receiver location map 54. The minimum distance to a receiving base station would easily be calculated from the GPS information" (Col. 3, lines 46-52)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Bajikar-Bala-Yen to evaluate the validity of the satellite positioning system based location fix by determining whether the satellite positioning system based location fix is within a specified range of the estimated location fix, as taught by Hill, in order to determine an expected area within which a mobile station is located.

13. Claims 23 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,539,230 to Yen in view of Bala et al. (U.S. Patent Application Publication 2002/0068580 A1).

As to claim 23, the Yen reference discloses the method of Claim 22. However, it does not expressly disclose defining the specified range based on estimated velocity of the mobile station and a time variable. The Bala reference teaches "a subscriber's likely current location could be determined, at least in part, based on the subscriber's last location, the speed and direction of travel of the subscriber and the time when the subscriber's last location was confirmed" (page 2, col. 1, paragraph [0020], lines 19-23).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Yen to define the specified range based on estimated velocity of the mobile station and a time variable, as taught by Bala, in order to determine the distance a mobile station travels.

As to claim 25, the Yen reference discloses the method of Claim 21, evaluating the validity of the location fix for which the validity determination is required by determining whether it is within a specified range of the current position fix of the mobile station. However, it does not disclose estimating a future position fix of the mobile station and use of the estimated future position fix for validating the location fix. The Bala reference teaches "a subscriber's likely current location could be determined, at least in part, based on the subscriber's last location, the speed and direction of travel of the subscriber and the time when the subscriber's last location was confirmed. This information can be used to estimate the subscriber's current position" (page 2, col. 1, paragraph [0020], lines 19-24).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Yen to estimate a future position fix of the mobile station and evaluate the validity of the location fix for which the validity determination is required by determining whether it is within a specified range of the estimated future position fix of the mobile station, as taught by Bala, in order to anticipate current location of a mobile station and use a transmitter closest to maximize system capacity.

As to claim 26, as cited in claim 23, Yen-Bala discloses estimating a velocity of the mobile station, defining the specified range based on the estimated velocity and time interval.

14. Claims 27-28, 30, and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2002/0198001 A1 to Bajikar in view of Yen (U.S. Patent 6,539,230).

As to claim 27, Figure 5 in Bajikar shows a cellular mobile station 510, comprising:

a satellite positioning system signal reception interface 532 in the mobile station for receiving satellite positioning system signals;

a cellular communications network interface 522 in the mobile station for communicating with a cellular communications network;

an information processor (520, 540) coupled to the satellite positioning system signal reception interface and the cellular communications network interface,

the information processor for evaluating the validity of a satellite positioning system based location fix by comparing it to one mobile station location fix ("augmentation data may also be exchanged between the GPS system and a short-range wireless communications interface on a transceiver . This information can include, but is not limited to differential correction, wide

area augmentation system (WASS) corrections, satellite ephemeris data, doppler shift estimates, satellite snapshot data, and terrain maps" (page 3, col. 1, paragraph [0028], line 1-7)).

However, the Bajikar reference does not disclose the information processor for evaluating the validity of a satellite positioning system based location fix by comparing it to at least one prior mobile station location fix. The Yen reference teaches evaluating the validity of a satellite positioning system based location fix by comparing it to at least one prior mobile station location fix ("In step 208, the wireless terminal will determine that the second entry of the location/parameter table, having location (x_1,y_1), is the closest to the current location of (x_4,y_4). Assuming that the test in step 210 indicates that the distance between (x_1,y_1) and (x_4,y_4) is less than L, control will pass to step 216, at which point the entry containing (x_1,y_1) and DCCH1 is placed in the first location of the location/parameter table and the other entries are shifted down" (Col. 7, lines 39-46). See Col. 6, line 48 to Col. 7, line 55).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the cellular mobile station of Bajikar to have the information processor for evaluating the validity of a satellite positioning system based location fix by comparing it to at least one prior mobile station location fix, as taught by Yen, in order to update current location and appropriate location dependent operating parameter for a mobile station.

As to claim 28, as cited in claim 27, Bajikar-Yen discloses the mobile station of Claim 27, the information processor for determining a network based mobile station location fix based on signal data stored in memory (Figure 3 in Bajikar; "the transceiver 310 receives a first code 345 from a transmitter 340 via the short-range wireless communications standard 320. The first

code 345 is received by the radio frequency unit 322 of the transceiver 310. The transceiver 310 generates a second code to correspond to that first code 345" (page 2, col. 1, paragraph [0020], lines 6-11). "The correlator 330 on the transceiver 310 uses both of these codes to determine the position of that transceiver 310 relative to that transmitter 340" (page 2, col. 1, paragraph [0020], lines 14-16), the information processor for evaluating the validity of a satellite positioning system based location fix by comparing it to at least one prior network based mobile station location fix.

As to claim 30, as cited in claim 27, Bajikar-Yen discloses the mobile station of Claim 27, the information processor for determining a network based mobile station location fix based on a timing relationship between cellular communication network signals received by the cellular communications network interface ("in one embodiment, the correlator compares the two codes by calculating a time shift between the first code and the second code. The time shift is used to determine the distance between the transceiver and the transmitter" (Bajikar, page 2, col. 1, paragraph [0021], lines 1-8)), the information processor for evaluating the validity of a satellite positioning system based location fix by comparing it to at least one prior network based mobile station location fix.

As to claim 32, as cited in claim 27, Bajikar-Yen discloses the mobile station of Claim 27, the information processor for evaluating the validity of a satellite positioning system based location fix by determining whether it is within a specified range of at least one prior mobile station location fix.

As to claim 33, as cited in claim 27, Bajikar-Yen discloses the mobile station of Claim 27, the information processor for evaluating the validity of the satellite positioning system based

location fix by determining whether it is closer to a more recent prior location fix than it is to a less recent prior location fix.

15. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2002/0198001 A1 to Bajikar in view of Yen (U.S. Patent 6,539,230) and further in view of Hill et al. (U.S. Patent 5,857,155).

As to claim 29, as cited in claim 28, Bajikar-Yen discloses the mobile station of Claim 28. However, it does not disclose determining the network based mobile station location fix based on cellular base station signal strength data received by the cellular communications network interface. The Hill reference teaches determining the network based mobile station location fix based on cellular base station signal strength data received by the cellular communications network interface ("at step 204, the two-way selective call subscriber device acquires a received signal strength measurement" (Col. 5, lines 45-47). "Then at step 208 a look-up table of the known transmitter coordinates is accessed and compared with the GPS information" (Col. 5, lines 49-52)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the cellular mobile station of Bajikar-Yen to have the information processor for determining the network based mobile station location fix based on cellular base station signal strength data received by the cellular communications network interface, as taught by Hill, in order to adjust transmission power or make transmission site selection decisions.

16. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2002/0198001 A1 to Bajikar in view of Yen (U.S. Patent 6,539,230) and further in view of Bala et al. (U.S. Patent Application Publication 2002/0068580 A1).

As to claim 31, as cited in claim 27, Bajikar-Yen discloses the mobile station of Claim 27, the information processor for evaluating the validity of the satellite positioning system location fix by determining whether it is within a specified range of the current position fix of the mobile station. However, it does not disclose estimating a future position fix of the mobile station and use of the estimated future position fix for validating the location fix. The Bala reference teaches "a subscriber's likely current location could be determined, at least in part, based on the subscriber's last location, the speed and direction of travel of the subscriber and the time when the subscriber's last location was confirmed. This information can be used to estimate the subscriber's current position" (page 2, col. 1, paragraph [0020], lines 19-24).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the mobile station of Bajikar-Yen to estimate a future position fix of the mobile station and evaluate the validity of the satellite positioning system based location fix by determining whether it is within a specified range of the estimated future position fix of the mobile station, as taught by Bala, in order to anticipate current location of a mobile station and use a transmitter closest to maximize system capacity.

Response to Arguments

17. Applicant's arguments filed November 20, 2003 have been fully considered but they are not persuasive.

Regarding independent claim 21, as cited in the Office action, the Yen reference teaches or suggests evaluating the validity of a recently generated location fix of the mobile station by comparing the location fix for which the validity determination is required to a previously generated mobile station location fix ("In step 208, the wireless terminal will determine that the second entry of the location/parameter table, having location (x_1,y_1), is the closest to the current location of (x_4,y_4). Assuming that the test in step 210 indicates that the distance between (x_1,y_1) and (x_4,y_4) is less than L, control will pass to step 216, at which point the entry containing (x_1,y_1) and DCCH1 is placed in the first location of the location/parameter table and the other entries are shifted down" (Col. 7, lines 39-46). See Col. 6, line 48 to Col. 7, line 55). The recently generated location fix is valid and stored if it is within a defined distance. The distance is used as a measure to evaluate the validity of a recently generated location fix.

Regarding claims 22-24 and 26, examiner refers to what is cited in the Office action for these claims and the above paragraph for claim 21.

Regarding claim 25, the Bala reference teaches or suggests estimating a future position fix ("movement information for a subscriber can include past locations for a subscriber, e.g., the identity of and number of times transmitters have successfully polled the subscriber, or future expected movement activity" (page 1, col. 1, paragraph [0006], lines 8-12)).

18. The Affidavit filed on February 10, 2004 under 37 CFR 1.131 has been considered but is ineffective to overcome the Bajikar reference.

Regarding independent claims 1 and 12, the Affidavit disclosure described using a history of measurements (previous location fixes or estimates) to determine the accuracy and develop confidence in the present GPS location fix. The claimed invention in claims 1 and 12 is

for a method to validate a present non-network (GPS) location fix by comparing it to a present network-based location fix. The scope of the declaration or affidavit is not commensurate with the scope of the claims.

19. The Affidavit filed on February 10, 2004 under 37 CFR 1.131 has been considered but is ineffective to overcome the Elliot reference.

The Affidavit disclosure described using a history of measurements (previous location fixes or estimates) to estimate the next/current location fix to determine the accuracy and develop confidence in the collected present GPS location fix. The Elliot reference teaches or suggests using a predetermined path (known and determined location fixes, including current and future location fixes) to compare a collected present GPS location fix to monitor a location of a mobile device and ensure that the mobile device does not deviate from the predetermined path. The scope of the declaration or affidavit is not commensurate with the scope of the Elliot reference even though the Elliot reference can be interpreted, as cited by examiner in Office Action, to read on claims 16 and 20.

Conclusion

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duy K Le whose telephone number is 703-305-5660. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F Urban can be reached on 703-305-4385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Duy Le
May 28, 2004

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